AMENDMENTS TO THE CLAIMS

Listing of claims:

This listing of claims replaces all prior versions and listings of claims in the application.

1. (Cancelled)

2. (Currently Amended) A semiconductor device comprising: ~~according to claim 1, wherein~~

a channel layer of SiGe formed over a silicon substrate, the channel layer having a thickness of 2 to 6 nm;

a gate electrode formed over the channel layer with a gate insulation film formed therebetween; and

a source/drain diffused layer formed on both sides of the gate electrode, wherein

the channel layer has a gradient composition of germanium which is gradually decreased from a side of the silicon substrate to a side of the insulation film.

3. (Currently Amended) A semiconductor device comprising: ~~according to claim 1, which further comprises~~

a channel layer of SiGe formed over a silicon substrate, the channel layer having a thickness of 2 to 6 nm;

a gate electrode formed over the channel layer with a gate insulation film formed therebetween;

a source/drain diffused layer formed on both sides of the gate electrode; and

a sidewall insulation film formed on the side wall of the gate electrode, wherein ~~and in which~~ the channel layer is formed only just below the gate electrode and the sidewall insulation film.

4. (Currently Amended) A semiconductor device comprising: ~~according to claim 1, wherein~~

a channel layer of SiGe formed over a silicon substrate, the channel layer having a thickness of 2 to 6 nm;

a gate electrode formed over the channel layer with a gate insulation film formed therebetween; and

a source/drain diffused layer formed on both sides of the gate electrode, wherein

the channel layer is formed only just below the gate electrode.

5. (Original) A semiconductor device comprising:

a buffer layer of SiGe formed over a silicon substrate;

a channel layer of silicon formed over the buffer layer, the channel layer having a

thickness of 2 to 6 nm;

a gate electrode formed over the channel layer with a gate insulation film formed therebetween; and

a source/drain diffused layer formed on both sides of the gate electrode.

6. (Currently Amended) A semiconductor device according to claim [[1]] 2, further comprising

source/drain electrodes of nickel silicide formed on the source/drain diffused layer.

7. (Original) A semiconductor device according to claim 3, further comprising source/drain electrodes of nickel silicide formed on the source/drain diffused layer.

8. (Original) A semiconductor device according to claim 4, further comprising source/drain electrodes of nickel silicide formed on the source/drain diffused layer.

9. (Original) A semiconductor device according to claim 5, further comprising source/drain electrodes of nickel silicide formed on the source/drain diffused layer.

10. (Original) A semiconductor device according to claim 3, further comprising source/drain electrodes of cobalt silicide formed on the source/drain diffused layer.

11. (Original) A semiconductor device according to claim 4, further comprising source/drain electrodes of cobalt silicide formed on the source/drain diffused layer.

12. (Original) A semiconductor device according to claim 5, further comprising source/drain electrodes of cobalt silicide formed on the source/drain diffused layer.

13. (Cancelled)

14. (Currently Amended) A method for fabricating a semiconductor device ~~according to claim 13, wherein~~ comprising the steps of:

forming a channel layer of SiGe formed over a silicon substrate, the channel layer having a thickness of 2 to 6 nm;

forming a gate electrode over the channel layer with a gate insulation film formed therebetween;

implanting a dopant impurity into the silicon substrate with the gate electrode as a mask to form first impurity diffused regions on both sides of the gate electrode;

forming a sidewall insulation film on the side wall of the gate electrode; and

implanting a dopant impurity into the silicon substrate with the gate electrode and the sidewall insulation film as a mask to form second impurity diffused regions, wherein

the step of forming a sidewall insulation film includes the step of forming an insulation film over the silicon substrate, covering the gate electrode, and the step of anisotropically etching the insulation film to form the sidewall insulation film of the insulation film on the side wall of the gate electrode, and

in the step of anisotropically etching the insulation film, the channel layer also in a region other than the region just below the gate electrode and the sidewall insulation film is etched off.

15. (Currently Amended) A method for fabricating a semiconductor device ~~according to claim 13, wherein~~ comprising the steps of:

forming a channel layer of SiGe formed over a silicon substrate, the channel layer having a thickness of 2 to 6 nm;

forming a gate electrode over the channel layer with a gate insulation film formed therebetween;

implanting a dopant impurity into the silicon substrate with the gate electrode as a mask to form first impurity diffused regions on both sides of the gate electrode;

forming a sidewall insulation film on the side wall of the gate electrode; and

implanting a dopant impurity into the silicon substrate with the gate electrode and the sidewall insulation film as a mask to form second impurity diffused regions, wherein

the step of forming the gate electrode includes the step of forming a semiconductor film over the gate insulation film, the step of forming a mask over the semiconductor film, and the

step of etching the semiconductor film using the mask to form the gate electrode of the semiconductor film, and

in the step of etching the semiconductor film, the channel layer also in a region other than the region just below the gate electrode is etched off.

16. (Original) A method for fabricating a semiconductor device according to claim 14, wherein

the metal silicide is cobalt silicide.

17. (Original) A method for fabricating a semiconductor device according to claim 15, wherein

the metal silicide is cobalt silicide.

18. (Original) A method for fabricating a semiconductor device comprising the steps of:

forming a buffer layer of SiGe over a silicon substrate;

forming a channel layer over the buffer layer, the channel layer having a thickness of 2 to 6 nm;

forming a gate electrode over the channel layer with a gate insulation film formed therebetween:

implanting a dopant impurity into the channel layer and the buffer layer with the gate electrode as a mask to form first impurity diffused regions on both sides of the gate electrode;

forming a sidewall insulation film on the side wall of the gate electrode; and

implanting a dopant impurity into the channel layer and the buffer layer with the gate electrode and the sidewall insulation film as a mask to from second impurity diffused regions.